

Amendments to the Specification

Please replace the paragraph appearing at page 6, line 13 to page 10 line 4 with the following amended paragraph:

Specifically, the present invention includes followings.

1. A method for removing leukocytes comprising causing a leukocyte-containing liquid to pass through a leukocyte removal filter comprising nonwoven fabric having an average fiber diameter of 0.3 to 3.0 μm to remove leukocytes from the leukocyte-containing liquid and to obtain a leukocyte-free liquid, and further comprising using nonwoven fabric having a formation index y of 50 or less corresponding to a thickness of 0.3 mm .

2. The method for removing leukocytes ~~according to claim 1~~, wherein the nonwoven fabric ~~having~~ has a filling rate of 0.05 to 0.30.

3. The method for removing leukocytes ~~according to claim 1 or 2~~, wherein the nonwoven fabric has a formation index y of 50 or less corresponding to a thickness of 0.3 mm, and y satisfied the following inequality.

$$y < -4 \times \text{average fiber diameter of nonwoven fabric } (\mu\text{m}) + 55$$

4. The method for removing leukocytes ~~according to any of claims 1 to 3~~, wherein the nonwoven fabric is obtained by using a melt-blown method.

5. The method for removing leukocytes ~~according to any of claims 1 to 4~~, comprising: using a leukocyte removal filter comprising a filter for removing aggregate upstream of the nonwoven fabric ~~according to any of claims 1 to 4~~ and/or a post-filter downstream of the nonwoven fabric.

6. The method for removing leukocytes ~~according to any of claims 1 to 5,~~
wherein the leukocyte removal filter is a flat filter having an inlet and an outlet for liquid.

7. The method for removing leukocytes ~~according to any of claims 1 to 5,~~
wherein the leukocyte removal filter is a cylindrical filter having an inlet and an outlet
for liquid.

8. The method for removing leukocytes ~~according to claim 6,~~ wherein a container
of the leukocyte removal filter is formed of a flexible resin.

9. The method for removing leukocytes ~~according to any of claims 1 to 8,~~
comprising: causing the leukocyte-containing liquid selected from whole blood, red cell
concentrate, platelet concentrate, platelet rich plasma, and platelet poor plasma to
pass through the leukocyte removal filter.

10. The method for removing leukocytes ~~according to any of claims 1 to 9,~~
comprising: causing the leukocyte-containing liquid to pass through the leukocyte
removal filter by utilizing head drop.

11. The method for removing leukocytes ~~according to any of claims 1 to 9,~~
comprising: causing the leukocyte-containing liquid to pass through the leukocyte
removal filter by increasing pressure of the inlet side of the leukocyte removal filter
and/or reducing pressure of the outlet side of the leukocyte removal filter.

12. The method for removing leukocytes ~~according to any of claims 1 to 8 and~~
~~44,~~ comprising: performing extracorporeal circulation by continuously collecting whole
blood from a body of a patient, causing the collected whole blood to pass through the
leukocyte removal filter, and returning the leukocyte-free whole blood to the body of the
patient.

13. Use of a leukocyte removal filter having a formation index y of 50 or less corresponding to a thickness of 0.3 mm for a leukocyte removal method comprising removing leukocytes from a leukocyte-containing liquid by using a leukocyte removal filter comprising nonwoven fabric having an average fiber diameter of 0.3 to 3.0 μm .

14. The use of a leukocyte removal filter ~~according to claim 13~~, wherein the nonwoven fabric has a filling rate of 0.05 to 0.30.

15. The use of a leukocyte removal filter ~~according to claim 13 or 14~~, wherein the nonwoven fabric has a formation index y of 50 or less corresponding to a thickness of 0.3 mm, and y satisfied the following inequality.

$$y < -4 \times \text{average fiber diameter of nonwoven fabric } (\mu\text{m}) + 55$$

16. The use of a leukocyte removal filter ~~according to any of claims 13 to 15~~, wherein the nonwoven fabric is obtained by using a melt-blown method is used.

17. The use of a leukocyte removal filter ~~according to any of claims 13 to 16~~, wherein the leukocyte removal filter comprises a filter for removing aggregate upstream of the nonwoven fabric ~~according to any of claims 13 to 16~~ and/or a post-filter downstream of the nonwoven fabric.

18. The use of a leukocyte removal filter ~~according to any of claims 13 to 17~~, wherein the leukocyte removal filter is a flat filter having an inlet and an outlet for liquid.

19. The use of a leukocyte removal filter ~~according to any of claims 13 to 17~~, wherein the leukocyte removal filter is a cylindrical filter having an inlet and an outlet for liquid.

20. The use of a leukocyte removal filter ~~according to claim 18~~, wherein a container of the leukocyte removal filter is formed of a flexible resin.

21. The use of a leukocyte removal filter ~~according to any of claims 13 to 20~~, for removing leukocytes from the leukocyte-containing liquid selected from whole blood, red cell concentrate, platelet concentrate, platelet rich plasma, and platelet poor plasma.

22. The use of a leukocyte removal filter ~~according to any of claims 13 to 21~~, for causing the leukocyte-containing liquid to pass through the leukocyte removal filter by utilizing head drop.

23. The use of a leukocyte removal filter ~~according to any of claims 13 to 21~~, for causing the leukocyte-containing liquid to pass through the leukocyte removal filter by increasing pressure of the inlet side of the leukocyte removal filter and/or reducing pressure of the outlet side of the leukocyte removal filter.

24. The use of a leukocyte removal filter ~~according to any of claims 13 to 20 and 23~~, for continuously collecting whole blood from a body of a patient and causing the collected whole blood to pass through the leukocyte removal filter.

25. A leukocyte removal filter for a leukocyte removal method for removing leukocytes from a leukocyte-containing liquid, comprising: nonwoven fabric having an average fiber diameter of 0.3 to 3.0 μm and a formation index y of 50 or less corresponding to a thickness of 0.3 mm.

26. The leukocyte removal filter ~~according to claim 25~~, wherein the nonwoven fabric has a filling rate of 0.05 to 0.30.

27. The leukocyte removal filter ~~according to claim 25 or 26~~, wherein the nonwoven fabric has a formation index y of 50 or less corresponding to a thickness of 0.3 mm, and y satisfies the following inequality.

$$y < -4 \times \text{average fiber diameter of nonwoven fabric } (\mu\text{m}) + 55$$

28. The leukocyte removal filter ~~according to any of claims 25 to 27~~, wherein the nonwoven fabric is obtained by using a melt-blown method.

29. A leukocyte removal filter, comprising: a filter for removing aggregate upstream of the nonwoven fabric ~~according to any of claims 25 to 28~~ and/or a post-filter downstream of the nonwoven fabric.

30. The leukocyte removal filter ~~according to any of claims 25 to 29~~, comprising a flat filter having an inlet and an outlet for liquid.

31. The leukocyte removal filter ~~according to any of claims 25 to 29~~, comprising a cylindrical filter having an inlet and an outlet for liquid.

32. The leukocyte removal filter ~~according to claim 30~~, wherein a container of the filter is formed of a flexible resin.

33. The leukocyte removal filter ~~according to any of claims 25 to 32~~, wherein the leukocyte removal filter is used to remove leukocytes from the leukocyte-containing liquid selected from whole blood, red cell concentrate, platelet concentrate, platelet rich plasma, and platelet poor plasma.

34. A blood extracorporeal circulation device for blood, comprising: at least the leukocyte removal filter ~~according to any of claims 25 to 33~~.

35. A blood extracorporeal circulation device for blood, comprising: at least the leukocyte removal filter ~~according to any of claims 25 to 33~~; an inlet for introducing whole blood collected from a body of a patient into the leukocyte removal filter; and an outlet for returning the leukocyte-free whole blood to the body of the patient.

Please replace the paragraph on page 10 at lines 7 to 9 with the following amended paragraph.

Fig. 1 is a graph showing the relationship between the formation index and the leukocyte residual rate of leukocyte removal filters of Examples 1 to ~~[[3]]~~4 and Comparative Examples 1 to 4.

Please replace the paragraph on page 10 at lines 10 to 12 with the following amended paragraph.

Fig. 2 is a graph showing the relationship between the formation index and the blood filtration pressure of the leukocyte removal filters of Examples 1 to ~~[[3]]~~4 and Comparative Examples 1 to 4.

Please replace the paragraph on page 10 at lines 13 to 15 with the following amended paragraph.

Fig. 3 is a graph showing the blood recovery rate and the time required for a series of operations for leukocyte removal filters of Examples ~~4 to 6~~ 5 to 8 and Comparative Examples 5 to 8.

Please replace the paragraph bridging page 17 at line 29 to page 18, line 6 with the following amended paragraph.

The filling rate is preferably 0.05 to ~~0.03~~ 0.30, still more preferably 0.07 to 0.25, and particularly preferably 0.07 to 0.20. If the filling rate is greater than 0.30, the flow resistance of the nonwoven fabric is increased, whereby flowability is not preferable.

On the other hand, if the filling rate is less than 0.05, leukocytes pass through the nonwoven fabric without being trapped by the nonwoven fabric, whereby the leukocyte removal performance is decreased. Moreover, the mechanical strength of the nonwoven fabric is unpreferably also decreased.

Please replace the paragraph on page 32 at lines 8 to 12 with the following amended paragraph.

The priming time, filtration time, recovery time, and blood recovery rate were determined by using the same filter configuration and evaluation method as those of Example [[4]] 5 except for using 25 sheets of PET nonwoven fabric having a weight per square meter of 40 g/m², a thickness of 0.23 mm, a filling rate of 0.14, an average fiber diameter of 1.3 μm, and a formation index of 47.5 as (3).

Please replace the paragraph on page 32 at lines 20 to 24 with the following amended paragraph.

The priming time, filtration time, recovery time, and blood recovery rate were determined by using the same filter configuration and evaluation method as those of Example [[4]] 5 except for using 25 sheets of PET nonwoven fabric having a weight per square meter of 40 g/m², a thickness of 0.24 mm, a filling rate of 0.14, an average fiber diameter of 1.2 μm, and a formation index of 55.5 as (3).

Please replace the paragraph bridging page 33 at line 1 to line 5 with the following amended paragraph.

The priming time, filtration time, recovery time, and blood recovery rate were determined by using the same filter configuration and evaluation method as those of Example [[4]] 5 except for using 25 sheets of PET nonwoven fabric having a weight per square meter of 39 g/m², a thickness of 0.24 mm, a filling rate of 0.13, an average fiber diameter of 1.3 μm, and a formation index of 61.3 as (3).

Please replace the paragraph on page 33 at lines 7 to 11 with the following amended paragraph.

The priming time, filtration time, recovery time, and blood recovery rate were determined by using the same filter configuration and evaluation method as those of Example [[4]] 5 except for using 25 sheets of PET nonwoven fabric having a weight per square meter of 39 g/m², a thickness of 0.24 mm, a filling rate of 0.13, an average fiber diameter of 1.3 μm, and a formation index of 65.0 as (3).

Please replace the paragraph on page 33 at lines 13 to 17 with the following amended paragraph.

The priming time, filtration time, recovery time, and blood recovery rate were determined by using the same filter configuration and evaluation method as those of Example [[4]] 5 except for using 25 sheets of PET nonwoven fabric having a weight per square meter of 40 g/m², a thickness of 0.23 mm, a filling rate of 0.13, an average fiber diameter of 0.9 μm, and a formation index of 62.6 as (3).